DERWENT-ACC-NO:        1985-117669

DERWENT-WEEK:          198520

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TITLE:                 **Borehole logging system for determining oil**
**saturation -**

                       **in sub:surface formation, comprises borehole**
**gravity log**
                       and resistivity log produced over depth
interval

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PATENT-ASSIGNEE:   MOBIL OIL CORP[MOBI]

PRIORITY-DATA: 1983US-0545333 (October 25, 1983)

PATENT-FAMILY:
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| PAGES   MAIN-IPC | | |
|--------|----------|----------|
| EP 141510 A | May 15, 1985 | E |
| 014     N/A | | |
| CA 1217715 A | February 10, 1987 | N/A |
| 000     N/A | | |
| NO 8404239 A | May 20, 1985 | N/A |
| 000     N/A | | |
| US 4517836 A | May 21, 1985 | N/A |
| 000     N/A | | |

DESIGNATED-STATES: DE FR GB

CITED-DOCUMENTS:  1.Jnl.Ref; A3...198734 ; GB 2113278 ; No-SR.Pub ;
US 4353248

APPLICATION-DATA:
| PUB-NO | APPL-DESCRIPTOR | APPL-NO |
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| EP 141510A | N/A | 1984EP-0306128 |
| September 7, 1984 | | |
| US 4517836A | N/A | 1983US-0545333 |
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INT-CL (IPC):  E21B047/06,  E21B049/00 ,  G01V011/00

ABSTRACTED-PUB-NO: EP 141510A

BASIC-ABSTRACT:

A method for determining residual oil saturation in a subsurface formation
surrounding a **borehole involves producing a borehole gravity log over a**
**selected depth interval in the borehole, measuring the bulk density of the**
**formation from the gravity log,** producing a resistivity log over the same depth
interval, measuring the bulk resistivity of the formation from the resistivity
log, and combining the measurement to derive a measurement of residual oil
saturation.

USE/ADVANTAGE - Determination of economic feasibility of applying tertiary
recovery techniques by calculating amt. of residual oil in a given field.
Also, detection of bypassed oil and gas zones in old wells. Combination of
**borehole gravity and deep electric log measurements minimises the sensitivity**
**that both measurements have to porosity** errors when taken alone.

ABSTRACTED-PUB-NO: US 4517836A

EQUIVALENT-ABSTRACTS:

Residual oil saturation around a **borehole is determined by measuring the bulk**
**density of the formation from a gravity log,** and measuring the bulk resistivity
from a resistivity log by deriving a weighted av. of the individual resistivity
measurements taken from the log at a series of spaced points.  The bulk density
and resistivity measurements are then combined to derive a measurement of
residual oil saturation.

Expressions are given for deriving residual saturation from bulk measurements,
for calculating the weighted resistivity value with use of porosity
measurements, and for calculating the weighted value for a bypassed hydrocarbon
zone in produced formations for which a porosity log is unavailable.

ADVANTAGE - The effects of porosity in both bulk density and bulk resistivity
measurements on the residual saturation measurements are minimised.
(5pp)

CHOSEN-DRAWING: Dwg.0/2

TITLE-TERMS: **BOREHOLE LOG SYSTEM DETERMINE OIL SATURATE SUB SURFACE FORMATION**
**COMPRISE BOREHOLE GRAVITY LOG** RESISTOR LOG PRODUCE DEPTH INTERVAL

DERWENT-CLASS:  H01 K08 Q49 S03 X25

CPI-CODES:  H01-A02; H01-B03B;

EPI-CODES:  S03-C02A; S03-C04; X25-E02;


SECONDARY-ACC-NO:
CPI Secondary Accession Numbers:        C1985-050846
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